

L Number	Hits	Search Text	DB	Time stamp
1	1152	((528/405) or (528/421) or (528/410) or (528/413) or (528/414) or (528/416)).CCLS.	USPAT; US-PGPUB	2003/05/07 10:17
2	89	((528/405) or (528/421) or (528/410) or (528/413) or (528/414) or (528/416)).CCLS. and polycarbonate\$	USPAT; US-PGPUB	2003/05/07 10:46
3	283	((528/405) or (528/421) or (528/410) or (528/413) or (528/414) or (528/416)).CCLS.) and carbinate\$	USPAT; US-PGPUB	2003/05/07 10:47
4	209	((528/405) or (528/421) or (528/410) or (528/413) or (528/414) or (528/416)).CCLS.) and carbonate\$; not ((528/405) or (528/421) or (528/410) or (528/413) or (528/414) or (528/416)).CCLS.) and polycarbonate\$)	USPAT; US-PGPUB	2003/05/07 10:47
5	0	((((528/405) or (528/421) or (528/410) or (528/413) or (528/414) or (528/416)).CCLS.) and carbinate\$) not (((528/405) or (528/421) or (528/410) or (528/413) or (528/414) or (528/416)).CCLS.) and polycarbonate\$)) and carbondioxide	USPAT; US-PGPUB	2003/05/07 10:47
6	38	(((528/405) or (528/421) or (528/410) or (528/413) or (528/414) or (528/416)).CCLS.) and carbonate\$) not (((528/405) or (528/421) or (528/410) or (528/413) or (528/414) or (528/416)).CCLS.) and polycarbonate\$)) and (carbon adj dicxide)	USPAT; US-PGPUB	2003/05/07 10:58
7	298	(528/371).CCLS.	USPAT; US-PGPUB	2003/05/07 10:58
8	0	("17 and (carbon adj dicxide)").PN.	USPAT; US-PGPUB	2003/05/07 10:58
9	50	((528/371).CCLS.) and (carbon adj dioxide)	USPAT; US-PGPUB	2003/05/07 10:59

L Number	Hits	Search Text	DB	Time stamp
1	1237	((502/102) or (502/154) or (502/156)).CCLS.	USPAT; US-PGPUB	2003/05/06 16:41
2	39	((502/102) or (502/154) or (502/156)).CCLS.) and polycarbonate\$	USPAT; US-PGPUB	2003/05/06 16:52
3	198	((502/102) or (502/154) or (502/156)).CCLS.) and carbonate\$	USPAT; US-PGPUB	2003/05/06 16:53
4	174	((((502/102) or (502/154) or (502/156)).CCLS.) and carbonate\$) not (((502/102) or (502/154) or (502/156)).CCLS.) and polycarbonate\$)	USPAT; US-PGPUB	2003/05/06 16:53

L20 ANSWER 16 OF 57 CA COPYRIGHT 2003 ACS
 AN 134:131940 CA
 TI Process for preparing high-molecular-weight aliphatic polycarbonates
 IN Zhai, Xiaojiang; Liu, Binyuan; Wang, Xianhong; Zhao, Daqing; Wang, Fusong
 PA Changchun Inst. of Applied Chemistry, Chinese Academy of Sciences, Peop.
 Pep. China
 SO Faming Zhanli Shengqing Gongkai Shuchingshu, 5 pp.
 CODEN: CNXXEV
 DT Patent
 LA Chinese
 IC ICM C08G064-02
 ICS C08G064-34
 CC 35-3 (Chemistry of Synthetic High Polymers)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1257885	A	20000628	CN 1998-125655	19981224
PRAI CN 1998-125655		19981224		
AB	Epoxides react with CO ₂ in solns. contg. rare earth compds. and organometallic compds. to prep. polycarbonates. Thus, propylene oxide and CO ₂ were polymed. in a soln. contg. Y trichloroacetate-ZnEt ₂ -glycerol to prep. a polycarbonate.			
ST	polycarbonate carbon dioxide epoxide copolymer; catalyst polymn yttrium zinc glycerol			
IT	Rare earth compounds FL: CAT (Catalyst use); USES (Uses) (catalysts contg. rare earth compds. and organometallic compds. for polymn. of carbon dioxide and epoxides)			
IT	Polycarbonates, preparation RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process) (catalysts contg. rare earth compds. and organometallic compds. for polymn. of carbon dioxide and epoxides)			
IT	Ethers, uses PL: NUU (Other use, unclassified); USES (Uses) (cyclic; catalysts contg. rare earth compds. and organometallic compds. for polymn. of carbon dioxide and epoxides)			
IT	Alcohols, uses PL: CAT (Catalyst use); USES (Uses) (polyhydric; catalysts contg. rare earth compds. and organometallic compds. for polymn. of carbon dioxide and epoxides)			
IT	Epoxides FL: IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses) (polymers with carbon dioxide; catalysts contg. rare earth compds. and organometallic compds. for polymn. of carbon dioxide and epoxides)			
IT	Polymerization catalysts (ring-opening; catalysts contg. rare earth compds. and organometallic compds. for polymn. of carbon dioxide and epoxides)			
IT	56-81-5, Glycerol, uses 57-55-6, 1,2-Propanediol, uses 107-21-1, Ethylene glycol, uses 112-27-6, Triethylene glycol 112-60-7, Tetraethylene glycol 504-63-2, 1,3-Propanediol 557-20-0, Diethylzinc 20101-72-8, Yttrium dichloroacetate 20101-73-9, Yttrium trichloroacetate 29770-44-3, Neodymium trifluoroacetate FL: CAT (Catalyst use); USES (Uses) (catalysts contg. rare earth compds. and organometallic compds. for			

IT 25511-85-7P, Carbon dioxide-propylene oxide copolymer 25608-11-1P,
Carbon dioxide-ethylene oxide copolymer
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical
process); PREP (Preparation); PROC (Process)
(catalysts contg. rare earth compds. and organometallic compds. for

L20 ANSWER 19 OF 57 CA COPYRIGHT 2003 ACS
AN 132:334842 CA
TI Copolymerization of carbon dioxide, propylene oxide, and cyclohexene oxide
by a yttrium-metal coordination catalyst system
AU Tan, Chung-Sung; Chang, Char-Fu; Hsu, Tsung-Ju
CS Department of Chemical Engineering, National Tsing Hua University,
Hsinchu, 30043, Taiwan
SO Preprints - American Chemical Society, Division of Petroleum Chemistry
(2000), 45(1), 100-103
CODEN: ACPCAT; ISSN: 0569-3799
PB American Chemical Society, Division of Petroleum Chemistry
DT Journal
LA English
CC 35-3 (Chemistry of Synthetic High Polymers)
AB Aliph.-cycloaliph. polycarbonates could be produced effectively by ring-opening copolymer. of cyclohexene oxide and propylene oxide with CO₂ using a cocatalyst system of Y(F₃CCO₂H)₃, Et₂Zn, and glycerol.
ST polycarbonate propylene oxide cyclohexene oxide based; cycloaliph aliph polycarbonate prepn yttrium catalyst; ring opening polymn catalyst polycarbonate prepn
IT Polycarbonates, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(aliph., cycloaliph.-; prepn. using yttrium-based polymn. catalysts)
IT Polymerization catalysts
(ring-opening; for copolymer. of cyclohexene oxide and propylene oxide with carbon dioxide)
IT 56-81-5, Glycerol, uses 557-20-0, Diethylzinc 10361-93-0, Yttrium trinitrate 15554-47-9, Yttrium tris(acetylacetone) 23363-14-6, Yttrium triacetate 37737-28-3, Yttrium tris(trifluoroacetate) 114012-65-6, Yttrium tris(2-ethylhexanoate)
RL: CAT (Catalyst use); USES (Uses)
(in catalysts for copolymer. of cyclohexene oxide and propylene oxide with carbon dioxide)
IT 119727-39-8P, Carbon dioxide-cyclohexene oxide-propylene oxide copolymer
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. using yttrium-based polymn. catalysts)
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1)

2/2/98

(FILE 'HOME' ENTERED AT 12:21:35 ON 07 MAY 2003)

FILE 'REGISTRY' ENTERED AT 12:21:44 ON 07 MAY 2003

L1 0 S NEODYMIUM TRICHLOROACETATE/CN
L2 1 S NEODYMIUM AND TRICHLOROACETATE?
L3 3 S YTTRIUM AND TRIFLUORACETATE?
L4 1 S YTTRIUM AND DICHLOROACETATE?
L5 3 S L2 OR L4 OR 37737-28-3/RN
L6 1 S ETHYLENE CARBONATE/CN
L7 1 S PROPYLENE CARBONATE/CN
L8 0 S CYCLOHEXYLENE CARBONATE/CN
L9 777 S CYCLOHEXYL? AND CARBONATE?
L10 2081 S C7H12O3/MF
L11 0 S L9 AND L10
L12 1506 S C7H12O3/MF
L13 5 S L12 AND L9
L14 1 S 4389-22-4/PN
L15 0 S CARBON DIOXIDE/CN
L16 1 S CARBON DIOXIDE/CN
L17 300 S 124-38-9/CRN AND PC/PCT

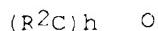
FILE 'CA' ENTERED AT 12:33:00 ON 07 MAY 2003

L18 58 S L5
L19 1 S L13 AND (L6 OR L7 OR L14)
L20 57 S L13 NOT L19
L21 23 S L17 AND (L6 OR L7 OR L14)
L22 184 S (L6 OR L7 OR L14) AND POLYCARBONATE?
L23 23 S L22 AND (L16 OR CO₂ OR CARBONDIOXIDE OR CARBON(W)DIOXIDE)
L24 8 S L23 NOT L21

L20 ANSWER 20 OF 57 CA COPYRIGHT 2003 ACS
 AN 132:93838 CA
 TI Ring-opening polymerization of lactone under catalysis of rare-earth compound
 IN Yuan, Minglong; Deng, Xianmo; Xiong, Chengdong
 PA Chengdu Institute of Organic Chemistry, Chinese Academy of Sciences, Peop.
 Rep. China
 SO Faming Shuanli Shengqing Gongkai Shuomingshu, 11 pp.
 CODEN: CNXXEV
 DT Patent
 LA Chinese
 IC ICM C08G065-10
 CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 29, 37
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1175601	A	19980311	CN 1996-117690	19960904
PPAI CN 1996-117690		19960904		
OS MARPAT 132:93838				
GI				

○



AB The polymn. of lactone is carried out at 100-250.degree. for 10-3000 min in inert gas or vacuum in presence of catalysts of rare-earth org. carboxylate (LnZ_3) or halogenated org. carboxylate, where Ln is Sc, or Y or one of lanthanide, Z is org. acid radical or halogenated org. acid radical ($HCOO-$, CH_3COO- , CH_3CH_2COO- , $CH_3CH_2CH_2COO-$, $ClCH_2COO-$, CCl_3COO- , CF_3COO- , C_6H_5-COO- , $-OOCCH_2CH_2COO-$, $BrCH_2COO-$). The molar ratio of monomer to catalyst is 200-20000. The lactone has structural formula I or II, where $n = 3-5$, R is H or alkyl group, h or m = 1 or 2; and may be DL-lactide, .epsilon.-caprolactone, glycolide, and 3-methyl-glycolide. The polymn. comprises homopolymn. and copolymn. between lactones or lactones and polyether, and the polyether is selected from polyethylene glycol, polypropylene glycol, and polybutylene glycol.
 ST lactone polymn rare earth carboxylate catalysis; ring opening polymn lactone lanthanum catalyst
 IT Rare earth compounds
 PL: CAT (Catalyst use); USES (Uses)

(carboxylic acid salts, catalyst; ring-opening polymn. of lactone under catalysis of rare-earth compd.)

IT Polyethers, preparation
Polyethers, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
.polyester-; ring-opening polymn. of lactone and polyether under catalysis of rare-earth compd.)

IT Polyesters, preparation
Polyesters, preparation
PL: IMF (Industrial manufacture); PREP (Preparation)
.polyether-; ring-opening polymn. of lactone and polyether under catalysis of rare-earth compd.)

IT Polyesters, preparation
PL: IMF (Industrial manufacture); PREP (Preparation)
(ring-opening polymn. of lactone under catalysis of rare-earth compd.)

IT Polymerization catalysts
(ring-opening; ring-opening polymn. of lactone under catalysis of rare-earth compd.)

IT 24980-41-4P, .epsilon.-Caprolactone homopolymer 26202-08-4P, Glycolide homopolymer 26681-10-4P 26780-50-7P, Glycolide-D,L-lactide copolymer 41706-81-4P, .epsilon.-Caprolactone-Glycolide copolymer 57321-94-5P 70524-20-8P, .epsilon.-Caprolactone-D,L-lactide copolymer 119388-27-1P
PL: IMF (Industrial manufacture); PREP (Preparation)
(ring-opening polymn. of lactone under catalysis of rare-earth compd.)

IT 537-03-1, Lanthanum oxalate 917-70-4, Lanthanum acetate 2081-11-0, Lanthanum formate 14518-63-9, Lanthanum benzoate 16922-04-6, Samarium acetate 20101-71-7 20101-73-9 20325-14-8 20532-74-5 23363-14-6, Yttrium acetate 25681-97-4, Lanthanum propionate 25682-05-7
42138-71-6, Neodymium trichloroacetate 42181-51-1 70236-92-9, Lanthanum trifluoroacetate 70236-99-6 254989-96-3
PL: CAT (Catalyst use); USES (Uses)
(ring-opening polymn. of lactone under catalysis of rare-earth compd.)

L20 ANSWER 21 OF 57 CA COPYRIGHT 2003 ACS
AN 131:272231 CA
TI Controlled synthesis of L-lactide- β -.epsilon.-caprolactone block copolymers using a rare earth complex as catalyst
AU Zhong, Zhiyuan; Yu, Dongheng; Meng, Fenghua; Gan, Zhihua; Jing, Xiabin
CS Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China
SO Polymer Journal (Tokyo) (1999), 31(8), 633-636
CODEN: POLJBE; ISSN: 0032-3896
PB Society of Polymer Science, Japan
DT Journal
LA English
CC 35-3 (Chemistry of Synthetic High Polymers)
AB Well defined diblock copolymers of L-lactide- β -.epsilon.-caprolactone were synthesized by sequential polymn. using (CF₃CO₂)₃Y/iso-Bu₃Al₃ as the catalyst system. The compns. of the copolymers could be adjusted by manipulating the comonomer feed ratios. Characterizations by GPC, ¹H NMR, ¹³C NMR, and DSC indicated that the block copolymer had a narrow mol. wt. distribution and well controlled sequences without random placement.
ST lactide caprolactone block polymn catalyst; yttrium fluoroacetate catalyst
block polymn; aluminum alkyl catalyst block polymn; ring opening block polymn catalyst; polyester diblock prepn rare earth catalyst
IT Polyesters, preparation
PL: SPN (Synthetic preparation); PREP (Preparation)
(block, diblock, lactide; controlled synthesis using rare earth complex catalyst)
IT Polymerization catalysts
(block; controlled diblock polymer synthesis using rare earth complex catalyst)
IT Polyesters, preparation
PL: SPN (Synthetic preparation); PREP (Preparation)
(caprolactone-based, block, diblock; controlled synthesis using rare earth complex catalyst)
IT Polyesters, preparation
PL: SPN (Synthetic preparation); PREP (Preparation)
(lactide, block, diblock; controlled synthesis using rare earth complex catalyst)
IT Polymerization catalysts
(ring-opening; controlled diblock polymer synthesis using rare earth complex catalyst)
IT 37737-28-3, Yttrium tris(trifluoroacetate)
PL: CAT (Catalyst use); USES (Uses)
(controlled diblock polymer synthesis using rare earth complex catalyst)
IT 100-99-2, Triisobutylaluminum, uses
PL: CAT (Catalyst use); USES (Uses)
(controlled diblock polymer synthesis using rare earth complex catalyst
contg.)
IT 111821-20-6P, .epsilon.-Caprolactone-L-lactide block copolymer
PL: SPN (Synthetic preparation); PREP (Preparation)
(diblock; controlled synthesis using rare earth complex catalyst)
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

L20 ANSWER 25 CF 57 CA COPYRIGHT 2003 ACS
AN 128:167785 CA
TI A novel rare earth coordination catalyst for polymerization of biodegradable aliphatic lactones and lactides
AU Zhang, Jie; Gan, Zhihua; Zhong, Zhiyuan; Jing, Xiabin
CS College of Science, Jilin University of Technology, Changchun, 130025, Peop. Rep. China
SO Polymer International (1998), 45(1), 60-66
CODEN: PLYIEI; ISSN: 0959-3103
PB John Wiley & Sons Ltd.
DT Journal
LA English
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 67
AB A novel rare earth coordination system composed of lanthanide trifluoroacetates $\text{Ln}(\text{CF}_3\text{COO})_3$ ($\text{Ln} = \text{Y, Yb, Nd, Tm, Ho, La, Pr}$) and triisobutylaluminium $\text{Al}(\text{i-Bu})_3$ was used as catalyst for the polymn. of ϵ -caprolactone (CL), D,L-lactide (DLA) and their copolymer. The influence of temp., time and catalyst concn. on polymn. yields and mol. wts. of the polyesters have been studied. The ring-opening polymn. of cyclic esters catalyzed by $\text{Ln}(\text{CF}_3\text{COO})_3/\text{Al}(\text{i-Bu})_3$ has some living character and the mol. wt. of the polyester could be controlled by adjusting the molar ratio of monomer to catalyst. The DLA/CL copolymer was synthesized by sequential addn. of monomers and the structure of the copolyester was characterized by GPC, NMR and DSC.
ST lanthanide trifluoroacetate catalyst caprolactone lactide polymn; triisobutylaluminium lanthanide trifluoroacetate polymn catalyst; biodegradable polyester caprolactone lactide polymn catalyst; rare earth coordination catalyst lactide polymn; ring opening polymn caprolactone lactide polyester
IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (biodegradable; novel rare earth coordination catalyst for polymn. of biodegradable aliph. lactones and lactides)
IT Polyesters, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (novel rare earth coordination catalyst for polymn. of biodegradable aliph. lactones and lactides)
IT Molecular weight
(of biodegradable aliph. lactones and lactide polymers)
IT Polymerization
Polymerization catalysts
(ring-opening; novel rare earth coordination catalyst for polymn. of biodegradable aliph. lactones and lactides)
IT 24980-41-4P, ϵ -Caprolactone homopolymer 25248-42-4P,
 ϵ -Caprolactone homopolymer, sru 26023-30-3P, D,L-Lactide homopolymer, sru 26680-10-4P, D,L-Lactide homopolymer 70524-20-8P,
 ϵ -Caprolactone-D,L-lactide copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (novel rare earth coordination catalyst for polymn. of biodegradable aliph. lactones and lactides)
IT 100-99-2, uses
RL: CAT (Catalyst use); USES (Uses)
(with lanthanide; novel rare earth coordination catalyst for polymn. of biodegradable aliph. lactones and lactides)

IT 29770-44-3, Neodymium trifluoroacetate **37737-28-3**, Yttrium trifluoroacetate 70236-92-9, Lanthanum trifluoroacetate 70236-94-1, Praseodymium trifluoroacetate 70236-98-5, Holmium trifluoroacetate 70237-00-2, Thulium trifluoroacetate 87863-62-5, Ytterbium trifluoroacetate
RL: CAT (Catalyst use); USES (Uses)
(with triisobutylaluminum; novel rare earth coordination catalyst for polymn. of biodegradable aliph. lactones and lactides)

L20 ANSWER 26 OF 57 CA COPYRIGHT 2003 ACS
AN 128:89129 CA
TI Homo- and copolymerization of butadiene and styrene with neodymium tricarboxylate catalysts
AU Kokayashi, Eiichi; Hayashi, Nanoto; Aoshima, Sadahito; Furukawa, Junji
CS Dep. Industrial Chem., Faculty Science Technology, Science Univ. Tokyo, Noda, Chiba, 278, Japan
SO Journal of Polymer Science, Part A: Polymer Chemistry (1998), 36(2), 141-147
CODEN: JPACCEC; ISSN: 0887-624X
PB John Wiley & Sons, Inc.
DT Journal
LA English
CC 35-3 (Chemistry of Synthetic High Polymers)
AB Homo- and copolymer. of butadiene (BD) and styrene (ST) were carried out using rare-earth metal catalysts, including the most active Nd-based catalysts, and the cis-1,4-polymer. mechanism was investigated by diad anal. of the copolymers. The catalyst activity for BD was markedly affected not only by the ligands of the catalysts, but also by the central rare-earth metals, whereas that for ST was mainly affected by the ligands.
For the catalysts Nd(OCOR)₃ (R = CF₃, CCl₃, CHCl₂, CH₂Cl and Me), Nd(OCOCCl₃)₃ was most active for BD; the activity decreased with increasing or decreasing pKa value of the ligands. For Gd(OCOR)₃ catalysts, the CF₃ deriv. gave the highest activity for BD. For ST homo- and copolymer., the max. activities were attained with the CCl₃ deriv. for both Nd- and Gd-based catalysts. The copolymer. with Nd(OCOCCl₃)₃ catalyst was also carried out at various monomer feed ratios to evaluate monomer reactivity ratios. The cis-1,4 content decreased with increasing ST content in the copolymers. From the diad anal., the Nd(OCOCCl₃)₃ catalyst controls the cis-1,4 structure of the BD unit by back-biting coordination of the penultimate BD unit. Furthermore, the long range coordination of the polymer chain by the Nd catalyst assists the cis-1,4 polymer.
ST neodymium tricarboxylate catalyst butadiene styrene polymer
IT Polymerization catalysts
(homo- and copolymer. of butadiene and styrene using neodymium tricarboxylate catalysts)
IT Polymerization
(mechanism of butadiene homo- and copolymer. using neodymium tricarboxylate catalysts)
IT Reactivity ratio in polymerization
(of butadiene with styrene using neodymium tricarboxylate catalysts)
IT 6192-13-8, Neodymium acetate 20532-74-5, Neodymium chloracetate 29770-44-3 31169-96-7, Gadolinium trichloracetate 31233-86-0, Gadolinium dichloroacetate 42138-67-0, Praseodymium trichloroacetate 42138-70-5, Neodymium dichloracetate **42138-71-6**, Neodymium trichloroacetate 42181-46-4, Praseodymium dichloroacetate 70236-94-1, Praseodymium trifluoroacetate 70236-96-3, Gadolinium trifluoroacetate 73794-14-6, Dysprosium dichloracetate 73794-15-7, Dysprosium trichloroacetate
FL: CAT (Catalyst use); USES (Uses)
(catalyst for homo- and copolymer. of butadiene and styrene)
IT 100-42-5, Styrene, reactions 106-99-0, Butadiene, reactions
FL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(mechanism and reactivity ratios in homo- and copolymer. of butadiene
and styrene using neodymium tricarboxylate catalysts)

IT 9003-17-2P, Polybutadiene 9003-53-6P, Polystyrene 9003-55-8P,

Butadiene-styrene copolymer

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. using neodymium tricarboxylate catalysts)

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

L20 ANSWER 27 OF 57 CA COPYRIGHT 2003 ACS
AN 126:317776 CA
TI Synthesis and characterization of biodegradable
.epsilon.-caprolactone/d,l-
lactide copolymers
AU Gan, Zhihua; Jing, Xiabin; Zhang, Jie
CS Polymer Phys. Lab., Changchun Inst. Appl. Chem., Chinese Acad. Sci.,
Changchun, 130022, Peop. Rep. China
SO Yingyong Huaxue (1997), 14(2), 5-7
CODEN: YIHJED; ISSN: 1000-0518
PB Yingyong Huaxue Bianji Weiyuanhui
DT Journal
LA Chinese
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 37
AB .epsilon.-Caprolactone/d,l-lactide copolymers with different compns. was
synthesized with a novel rare earth coordination catalyst composed of
yttrium trifluoroacetate Y(CF₃COO)₃ and triisobutylaluminum Al(i-Bu)₃,
and
characterized by GPC and ¹H NMR. The chem. compns. of the copolymer can
be adjusted by changing the monomer wt. ratio in feed, and morphol. of
the
copolymer is influenced greatly by the compn.
ST biodegradable caprolactone lactide copolymer; yttrium isobutylaluminum
caprolactone lactide copolymer catalyst
IT Polyesters, preparation
PL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(aliph.: prepn. and characterization of biodegradable
caprolactone-lactide copolymers)
IT Polymers, preparation
PL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(biodegradable; prepn. and characterization of biodegradable
caprolactone-lactide copolymers)
IT Polymerization catalysts
(ring-opening; prepn. and characterization of biodegradable
caprolactone-lactide copolymers)
IT 100-99-2, Triisobutylaluminum, uses 37737-28-3, Yttrium
trifluoroacetate
PL: CAT (Catalyst use); USES (Uses)
(catalyst; in prepn. of biodegradable caprolactone-lactide copolymers)
IT 70524-20-8P, .epsilon.-Caprolactone-dl-lactide polymer
PL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and characterization of biodegradable caprolactone-lactide
copolymers)

L20 ANSWER 29 OF 57 CA COPYRIGHT 2003 ACS
AN 125:301699 CA
TI Homo- and copolymerizations of butadiene and styrene with
Ln(OCOCCl₃)₃-based catalyst
AU Kaita, Shojiro; Kobayashi, Eiichi; Sakakibara, Sayuri; Aoshima,
Sadahito;
Furukawa, Junji
CS Fac. Sci. Technol., Sci. Univ. Tokyo, Chiba, 278, Japan
SO Journal of Polymer Science, Part A: Polymer Chemistry (1996), 34(16),
3431-3434
CODEN: JPACCEC; ISSN: 0887-624X
PB Wiley
DT Journal
LA English
CC 35-4 (Chemistry of Synthetic High Polymers)
AB Polybutadiene, polystyrene, and butadiene styrene copolymers were prep'd.
in the presence of Ln(OCOCCl₃)₃-i-Bu₃Al-Et₂AlCl catalyst systems, where
Ln = Pr, Nd, Gd, Dy, and Yb. The activity of the catalysts was Nd > Pr > Gd
> Dy .apprx. Yb. The polymers contg. butadiene had predominately cis
structures.
ST lanthanide trichloroacetate polymn catalyst; praseodymium
trichloroacetate
polymn catalyst; neodymium trichloroacetate polymn catalyst; gadolinium
trichloroacetate polymn catalyst; dysprosium trichloroacetate polymn
catalyst; ytterbium trichloroacetate polymn catalyst; butadiene polymn
catalyst lanthanide trichloroacetate; styrene polymn catalyst lanthanide
trichloroacetate
IT Polymerization catalysts
(homo- and copolymns. of butadiene and styrene with
Ln(OCOCCl₃)₃-i-Bu₃Al-Et₂AlCl catalyst)
IT Chains, chemical
(microstructure in homo- and copolymns. of butadiene and styrene with
Ln(OCOCCl₃)₃-i-Bu₃Al-Et₂AlCl catalyst)
IT 96-10-6, Diethylaluminum chloride, uses 100-99-2, Triisobutylaluminum,
uses 16056-77-2, Gadolinium acetate 31169-95-6, Gadolinium
chloracetate 31169-96-7, Gadolinium trichloroacetate 31169-99-0
31233-86-0, Gadolinium dichloroacetate 42138-67-0 **42138-71-6**
70236-96-3, Gadolinium trifluoroacetate 73794-15-7
RL: CAT (Catalyst use); USES (Uses)
(homo- and copolymns. of butadiene and styrene with
Ln(OCOCCl₃)₃-i-Bu₃Al-Et₂AlCl catalyst)
IT 9003-17-2P, Polybutadiene 9003-53-6F, Polystyrene 9003-55-8P,
Butadiene-styrene copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(homo- and copolymns. of butadiene and styrene with
Ln(OCOCCl₃)₃-i-Bu₃Al-Et₂AlCl catalyst)

L20 ANSWER 30 OF 57 CA COPYRIGHT 2003 ACS
AN 124:87878 CA
TI Controlled polymerization of acrylates activated by lanthanoid triflates
AU White, Daniela; Matyjaszewski, Krzysztof
CS Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA,
15213, USA
SO Polymer Preprints (American Chemical Society, Division of Polymer
Chemistry) (1995), 36(2), 286-7
CODEN: ACPPAY; ISSN: 0032-3934
PB American Chemical Society, Division of Polymer Chemistry
DT Journal
LA English
CC 35-3 (Chemistry of Synthetic High Polymers)
AB This paper presents the results obtained in the polymn. of Me
methacrylate
and Me and Bu acrylates initiated by the group-transfer catalyst
1-methoxy-2-methyl-1-(trimethylsilyloxy)-1-propene using Sm, Ln, and Y
triflates as cocatalysts in THF and CH₂Cl₂ at room temp. Kinetic plots
and polymer mol. wts. were presented.
ST acrylic polymn group transfer; catalyst polymn group transfer; lanthanoid
triflate catalyst polymn
IT Polymerization catalysts
(group-transfer, lanthanoid triflates; for acrylic monomers)
IT Kinetics of polymerization
(group-transfer, of acrylic monomers in the presence of lanthanoid
triflates)
IT 1263-49-2, Samarium tris(trifluoroacetate) 31469-15-5 **37737-28-3**
, Yttrium tris(trifluoroacetate) 70236-92-9, Lanthanum
tris(trifluoroacetate)
RL: CAT (Catalyst use); USES (Uses)
(cocatalyst for; prepn. of acrylic polymers with narrow
polydispersities by group-transfer polymn.)
IT 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate 141-32-2, Butyl
acrylate
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(kinetics of group-transfer polymn. in the presence of lanthanoid
triflates)
IT 9003-21-8P, Poly(methyl acrylate) 9003-49-0P, Poly(butyl acrylate)
9011-14-7P, PMMA
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of acrylic polymers with narrow polydispersities by
group-transfer polymn.)
IT 75-09-2, Methylene chloride, uses 109-99-9, THF, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent for; prepn. of acrylic polymers with narrow polydispersities
by group-transfer polymn.)

L10 ANSWER 33 OF 57 CA COPYRIGHT 2003 ACS
AN 110:31318 CA
TI Ring-opening polymerization of tetrahydrofuran with rare earth-contained catalysts
AU Li, Fengfu; Jin, Yingtai; Pei, Fengkui; Wang, Fosong
CS Changchun Inst. Appl. Chem., Acad. Sin., Changchun, Peop. Rep. China
SO Journal of Applied Polymer Science (1993), 50(11), 2017-20
CODEN: JAPNAB; ISSN: 0021-8995
DT Journal
LA English
CC 35-3 (Chemistry of Synthetic High Polymers)
AB Rare earth trifluoroacetates, $\text{Ln}(\text{CF}_3\text{CO}_2)_3$ (Ln = 13 rare earth elements), combined with $\text{RnAlH}_3\text{-n}$ (R = Me, octyl, n = 3; R = Et, iso-Bu, n = 2, 3) were used as catalysts for the polymn. of THF. The activity increased by adding propylene oxide (I), as a promoter, to the polymn. system, producing high mol. wt. polytetrahydrofuran (PTHF). The effects of Ln , I/Ln ratio, Al/Ln ratio, and other factors on the polymn. of THF were also studied.
ST THF polymn. catalyst rare earth; ring opening polymn. THF
IT Polymerization catalysts
(ring-opening, rare earth trifluoroacetate-based, for THF)
IT 75-56-9, Propylene oxide, uses 2263-49-2, Samarium tris(trifluoroacetate) 29770-44-3, Neodymium tris(trifluoroacetate) 37737-28-3 58097-52-2, Terbium tris(trifluoroacetate) 70236-92-9 70236-93-0 70236-94-1 70236-95-2, Europium tris(trifluoroacetate) 70236-96-3 70236-97-4, Dysprosium tris(trifluoroacetate) 70236-98-5, Holmium tris(trifluoroacetate) 70236-99-6, Erbium tris(trifluoroacetate) 70237-00-2, Thulium tris(trifluoroacetate)
RL: CAT (Catalyst use); USES (Uses)
(catalysts contg., for polymn. of THF)
IT 75-24-1, Trimethylaluminum 97-93-3, Triethylaluminum, uses 100-99-2, Triisobutylaluminum, uses 871-27-2, Diethylaluminum hydride 1070-00-4,
Trioctylaluminum 1191-15-7, Diisobutylaluminum hydride
RL: CAT (Catalyst use); USES (Uses)
(catalysts, contg. rare earth trifluoroacetates, for polymn. of THF)
IT 24979-97-3P, Poly(tetrahydrofuran)
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, rare earth trifluoroacetate-based catalysts for)

L20 ANSWER 34 OF 57 CA COPYRIGHT 2003 ACS
AN 119:271783 CA
TI Ring opening polymerization of tetrahydrofuran with rare earth catalysts
AJ Li, Fengfu; Jin, Yingtai; Guan, Weigang; Pei, Fengkui; Wang, Fosong
CS Changchun Inst. Appl. Chem., Acad. Sin., Changchun, 130022, Peop. Rep.
China
SO Cuihua Xuebao (1993), 14(4), 329-32
CODEN: THHPD3; ISSN: 0253-9337
DT Journal
LA Chinese
CC 35-3 (Chemistry of Synthetic High Polymers)
AB Trifluoroacetates of rare earth (CF_3CO_2) $_3\text{Ln}$ ($\text{Ln} = \text{Y}, \text{La}, \text{Ce}, \text{Pr}, \text{Nd}, \text{Sm}, \text{Eu}, \text{Gd}, \text{Tb}, \text{Dy}, \text{Ho}, \text{Er}, \text{and Tm}$) combined with alkylaluminum RnAlH_{3-n} ($\text{R} = \text{Me, octyl, n} = 3; \text{R} = \text{Et, iso-Bu, n} = 3,2$) were first used as catalysts for the ring-opening polymn. of THF. The activity was greatly increased by adding promoter (PE) to the catalyst system, and was decreased by adding a small amt. of water. This catalyst system was favorable for the polymn. of THF with high activity, and high-mol.-wt. poly(tetrahydrofuran) could be obtained. The effects of Ln , Al/Ln , PE/ Ln , RnAlH_{5-n} and temp. etc. on the polymn. activity were also studied.
ST THF ring opening polymn catalyst; rare earth catalyst polymn THF; aluminum catalyst polymn THF; polytetrahydrofuran prepn catalyst
IT Rare earth metals, compounds
RL: CAT (Catalyst use); USES (Uses)
(catalysts, contg. aluminum, for ring-opening polymn. of THF)
IT Polyoxalkylenes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, catalysts for, aluminum-rare earth metal compds. as)
IT Polymerization catalysts
(ring-opening, aluminum-rare earth metal compds., for THF)
IT 7732-18-5, Water, uses
RL: USES (Uses)
(activity of aluminum-rare earth metal compd. catalysts for ring-opening polymn. of THF in presence of)
IT 2263-49-2 29770-44-3 **37737-28-3**, Yttrium trifluoroacetate
58097-52-2 70236-92-9 70236-93-0 70236-94-1 70236-95-2
70236-96-3 70236-97-4 70236-98-5 70236-99-6 70237-00-2
RL: CAT (Catalyst use); USES (Uses)
(catalysts, contg. aluminum, for ring-opening polymn. of THF)
IT 75-24-1, Trimethylaluminum 97-93-8, Triethylaluminum, uses 100-99-2,
Triisobutylaluminum, uses 871-27-2, Diethylaluminum hydride
1070-00-4,
Trioctylaluminum 1191-15-7, Diisobutylaluminum hydride
RL: CAT (Catalyst use); USES (Uses)
(catalysts, contg. rare earth compds., for ring-opening polymn. of THF)
IT 24979-97-3P, THF homopolymer 25190-06-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, catalysts for, aluminum-rare earth metal compds. as)
IT 151438-87-8, PE (promoter)
RL: USES (Uses)
(promoters, for aluminum-rare earth metal compd. catalysts, for ring-opening polymn. of THF)

L13 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 4389-22-4 REGISTRY
CN 1,3-Benzodioxol-2-one, hexahydro- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Carbonic acid, 1,2-cyclohexylene ester (6CI)
CN Carbonic acid, cyclic 1,2-cyclohexylene ester (8CI)
OTHER NAMES:
CN Cyclohexene carbonate
FS 3D CONCORD
MF C₇ H₁₀ O₃
CI COM
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS,
CHEMINFORMRX, USPATFULL
(*File contains numerically searchable property data)

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PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

14 REFERENCES IN FILE CA (1957 TO DATE)
14 REFERENCES IN FILE CAPLUS (1957 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

LS ANSWER 1 OF 3 REGISTRY COPYRIGHT 2003 ACS
RN 42138-71-6 REGISTRY
CN **Acetic acid, trichloro-, neodymium(3+) salt (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN **Neodymium trichloroacetate**
CN **Neodymium tris(trichloroacetate)**
MF C2 H Cl3 C2 . 1/3 Nd
LC STN Files: CA, CAPLUS, GMELIN*, USPATFULL
(*File contains numerically searchable property data)
CRN (76-03-9)

Cl

Cl C CO₂H

Cl

● 1/3 Nd(III)

18 REFERENCES IN FILE CA (1957 TO DATE)
18 REFERENCES IN FILE CAPLUS (1957 TO DATE)

LS ANSWER 2 OF 3 REGISTRY COPYRIGHT 2003 ACS
RN **37737-28-3** REGISTRY
CN Acetic acid, trifluoro-, yttrium(3+) salt (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Tris(trifluoroacetato)yttrium
CN Yttrium trifluoracetate
CN Yttrium tris(trifluoroacetate)
MF C2 H F3 O2 . 1/3 Y
LC STN Files: CA, CAPLUS, CHEMCATS, CSCHEM, USPATFULL
CRN (76-05-1)

F

F C CO₂H

F

● 1/3 Y(III)

39 REFERENCES IN FILE CA (1957 TO DATE)
39 REFERENCES IN FILE CAPLUS (1957 TO DATE)

LS ANSWER 3 OF 3 REGISTRY COPYRIGHT 2003 ACS
RN 20101-72-8 REGISTRY
CN **Acetic acid, dichloro-, yttrium(3+) salt (8CI, 9CI)** (CA INDEX NAME)
OTHER NAMES:

CN **Yttrium dichloroacetate**
MF C2 H2 Cl2 O2 . 1/3 Y
LC STN Files: CA, CAPLUS, USPATFULL
CRN (79-43-6)

Cl

Cl CH⁻CO₂H

● 1/3 Y(III)

4 REFERENCES IN FILE CA (1957 TO DATE)
4 REFERENCES IN FILE CAPLUS (1957 TO DATE)